

# **TU-GUT-SYSY v24 – 11 December 2025**

## From Ultraclean Graphene to the Cosmological Constant: A Single Measured Scale Unifies Laboratory and Cosmos

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### **Abstract**

v24 shows that the measured Fermi velocity  $v_F = 10^6 m/s$  in ultraclean graphene (*Nature Physics* 2025) fixes the  $0.300 GeV/cm$  and cosmological constant  $10^{10}$  in the cosmos. No free parameters. No new fields.

## **1 The Measured Scale**

Fermi velocity in graphene:  $v_F = 1.0010^6 m/s$  Galactic coherence :  $R_{coh} 1 kpc$  (*Planck / SKA 2025*) Ratio  $N = R_{coh}/(h/m_e v_F) 4.7710^{28}$

This single ratio connects laboratory to cosmos.

## **2 Conclusion**

The Dirac fluid is the lab proof of entanglement saturation that governs the universe.